

7-5: Independent Events

Warm-up: Suppose the probability that a boy is born in a family is .49 and that a family has three children of different ages.

1. What is the probability that the oldest two children are boys?
2. What is the probability that the youngest child is a girl?
3. What is the probability that the oldest two children are boys and the youngest child is a girl?
4. Are the events of questions 1 and 2 independent?

Independent Events:

Example 1: Imagine that a fair coin is tossed 4 times. Let A = getting all heads and B = getting all tails. Are A and B independent or dependent? How do you know?

Dependent Events:

Example 2: Two six-sided dice are rolled. Let S = the sum is 7 and F = the first die rolled is 5. Are S and F dependent or independent?

Example 3: A coach keeps records on his basketball team. When a team member shoots two free throws, 65% of the time the first free throw is made and 70% of the second free throw is made. What percent of the time do both free throws need to be made in order for these events to be independent?

Homework:

"Mistakes are a part of being human. Appreciate your mistakes for what they are: precious life lessons that can only be learned the hard way. Unless it's a fatal mistake, which, at least, others can learn from." - Al Franken